EET4340

Lab 2 SPI

Part 1 – SPI with an EEPROM

Start with the SPI.c file and the LCD code. Get an EEPROM from me. Check the datasheet to see the pinouts. Wire the EEPROM on a breadboard per the wiring instructions at the beginning of the SPI.c file.

1. Modify the SPI firmware so it stores an additional value in the EEPROM each time the button is pressed. If the count being stored is odd it should store an ‘O’ at address 0x340. If the count is even it should store an ‘E’. The firmware should read this value on reset and display it on the LCD along with the count stored at address 0x280.
2. Currently the count is stored as a one byte value so the largest possible count that can saved is 255. (See what happens if the count goes over 255.) Modify the firmware so it stores the count as a two byte value. You will also need to read it in as a two byte value.
3. Modify the SPI firmware so it stores a short string (less than 16 characters) to the EEPROM at location 0x10000. Make sure you can read it back. Trade your EEPROM with another group and see if you can read their message.
4. If you have time try out one of the advanced functions of the EEPROM. The Chip Erase command is a good one to try. Read the datasheet to see how it is implemented.